

In the Claims

Please replace all prior versions, and listings, of claims in the application with the following list of claims:

1. (Currently Amended) An electrochemical device which comprises comprising a first pole, a second pole, and an ionic conductor, [[said]] the first pole containing comprising an active material having at least one element selected from the group consisting of 1B Group, 2B Group, 6A Group, 7A Group, and 8 Group of [[the]] a short-form periodic table, and [[said]] the ionic conductor containing comprising an element belonging to 2A Group and/or 3B Group of the short-form periodic table, wherein the active material has an average particle diameter as small as 1 nanometer.

2. (Currently Amended) The electrochemical device as defined in Claim 1, wherein the active material for the first pole [[is]] comprises a mixture of one or more (in mixture form) compounds, each of the one or more compounds is of the a metal oxide or a metal sulfide represented by a the general formula-(1) below.

(1) MX...-(1),

(wherein M denotes any is an element selected from a group consisting of Cr, Mn, Fe, Co, Ni, Cu, Zn, Pd, Ag, Pt, and Au, and X denotes is an element selected from a group consisting of O or S[[])).

3. (Currently Amended) The electrochemical device as defined in Claim 2, wherein the metal oxide or the metal sulfide represented by the general formula (1) is composed of an element M and an element X such that a the ratio of M/X M to X is in a range from 0.3 to 3.

4. (Currently Amended) The electrochemical device as defined in Claim 1, wherein the active material for the first pole has an average particle diameter no smaller than 1 nanometer nm and no larger than 100 micrometers μm.

5. (Original) The electrochemical device as defined in Claim 1, wherein the first pole is formed from the active material mixed with a conductive material and a polymeric binder.

6. (Currently Amended) The electrochemical device as defined in Claim 1, wherein [[said]] ions from the ionic conductor comprise [[are]] magnesium ions, aluminum ions, and/or calcium ions.

7. (Currently Amended) The electrochemical device as defined in Claim 1, wherein [[said]] the second pole comprises contains magnesium, aluminum, and/or calcium in the form of a simple substance or a compound.

8. (Currently amended) The electrochemical device as defined in Claim 1, wherein [[said]] the ionic conductor is an electrolytic solution or a solid electrolyte.

9. (Currently Amended) The electrochemical device as defined in Claim 1, wherein the electrochemical device which is a primary or secondary battery.

10. (New) An electrochemical device comprising a first pole, a second pole, and an ionic conductor, wherein:

the first pole comprises an active material comprising at least one compound represented by a general formula

MX,

wherein M is an element selected from a group consisting of Cr, Mn, Fe, Co, Ni, Cu, Zn, Pd, Ag, Pt, and Au, and X is an element selected from a group consisting of O and S;

the ionic conductor comprises an element belonging to 2A Group and/or 3B Group of the short-form periodic table; and

the active material has an average particle diameter as small as 1 nanometer.

11. (New) The electrochemical device of claim 10, wherein the active material comprises a mixture of a plurality of compounds, each of the plurality of compounds being represented by the general formula MX.

12. (New) The electrochemical device of claim 10, wherein the electrochemical device is a primary or secondary battery, and wherein crystal structure of the active material is unchanged after charging and/or discharging during at least one cycle.

13. (New) The electrochemical device of claim 10, wherein the electrochemical device is a primary or secondary battery, and wherein crystal state of the active material is unchanged after charging and/or discharging during at least one cycle.

14. (New) The electrochemical device of claim 10, wherein a ratio of M to X in the at least one compound is between 0.3 and 3.

15. (New) The electrochemical device of claim 10, wherein a ratio of M to X in the at least one compound is between 0.5 and 0.7.

16. (New) The electrochemical device of claim 10, wherein the active material has an average particle diameter between 1 nanometer and 1 micrometer.

17. (New) The electrochemical device of claim 10, wherein the active material has an average particle diameter between 10 nanometers and 300 nanometers.
18. (New) The electrochemical device of claim 10, wherein the ions from the ionic conductor comprise magnesium ions, aluminum ions, and/or calcium ions.
19. (New) The electrochemical device of claim 10, wherein the second pole comprises magnesium, aluminum, and/or calcium in form of a simple substance or a compound.
20. (New) The electrochemical device of claim 10, wherein the first pole comprises a mixture of the active material, a conductive material, and a polymeric binder.